

WHAT IS CLAIMED IS:

1. An information recording apparatus comprising:

a disc-shaped recording medium at least having a management information region and a user data region made up of a plurality of logical blocks; and

recording means for continuously recording information signals in said user data region of said storage means from a recording start logical block to a recording end logical block and for again recording the information signals from the recording start logical block.

2. The information recording apparatus according to claim 1 wherein said recording means includes

splitting means for splitting a user data region of said disc-shaped recording medium into a plurality of data areas, continuously recording information signals from a recording start logical block to a recording end logical block from one data area to another and again recording the information signals from the recording start logical block.

3. The information recording apparatus according to claim 2 wherein said recording means includes

control means for varying the frequency of recording of said recording areas to record information signals.

4. The information recording apparatus according to claim 3 wherein said control means includes recording means for recording at least a portion of information signals

recorded in a first data area among said plural data areas in data areas other than said first data area.

5. The information recording apparatus according to claim 4 wherein said recording means when recording information signals recorded in said first data area in certain ones of said plural data areas vary the compression rate of the information signals for doing the recording.

6. The information recording apparatus according to claim 2 wherein there are provided n disc-shaped recording mediums and wherein

said recording means includes means for splitting said data areas as the capacity of the user data region of said disc-shaped recording medium is n -tupled responsive to an actuation command of said actuation input means.

7. The information recording apparatus according to claim 2 wherein there are provided n disc-shaped recording mediums and wherein

said recording means includes splitting means for splitting the user data region of each disc-shaped recording medium into m data areas responsive to an actuation command of said actuation input means for splitting into $n \times m$ data areas.

8. The information recording apparatus according to claim 1 wherein, if the time for one complete revolution of the disc-shaped recording medium is r , the seek time required for the recording means to move from the innermost rim to the outermost rim of the disc-shaped recording medium is t and the angle of rotation for the seek time t is θ , the recording start logical block and the recording end logical block are positioned

with a phase offset to meet the relation $\theta > t/r \times 360^\circ$.

9. The information recording apparatus according to claim 2 wherein said recording means splits each data area into at least two regions, that is an outer rim side region and an inner rim side region of said disc-shaped recording medium, and wherein said recording means records information signals in said outer rim side region from an outer/inner rim side recording start logical block to an inner/outer rim side recording end logical block, said recording means recording information signals in said inner rim side area from the inner/outer rim side recording start logical block to an outer/inner rim side recording end logical block.

10. An information recording method for recording information signals on a disc-shaped recording medium at least having a management information region and a user data region made up of a plurality of logical blocks, comprising:

continuously recording information signals in said user data region from a recording start logical block to a recording end logical block of the disc-shaped recording medium and for again recording the information signals from the recording start logical block.

11. The information recording method according to claim 10 wherein said recording step includes

splitting the user data region into a plurality of data areas; and

continuously recording information signals in each data area as from the recording start logical block to the recording end logical block of said disc-shaped

recording medium and again recording information signals as from the recording start logical block.

12. The information recording method according to claim 11 wherein said recording step includes recording at least a portion of information signals recorded in a first data area among said plural data areas in data areas other than said first data area.

13. The information recording method according to claim 11 wherein said recording step includes controlling the frequency of recording of the information signals in each data area to hierarchize the recording durability from one data area to another.

14. The information recording method according to claim 10 wherein said user area region has a recording start logical block arrayed at a position corresponding to the time required for movement from a position of the recording start logical block to a recording end logical block.

15. The information recording method according to claim 11 wherein, when recording information signals on n disc-shaped recording mediums, said recording step includes n -tupling the capacity of the user data region of said disc-shaped recording medium for doing the recording.

16. The information recording method according to claim 11 wherein, when recording information signals on n disc-shaped recording mediums, said recording step includes splitting the user data region of each disc-shaped recording medium into m data areas for splitting into $n \times m$ data areas for doing the recording.

17. The information recording method according to claim 10 wherein said recording

step includes splitting each data area into at least two regions, namely an outer rim side region and an inner rim side region; and

recording information signals in an outer rim side region from an outer/inner rim side recording start logical block to an inner/outer rim side recording end logical block and also recording information signals in an inner rim side region from an inner/outer rim side recording start logical block to an outer/inner rim side recording end logical block.

18. An information recording/reproducing apparatus comprising:

a disc-shaped recording medium at least having a management information region and a user data region made up of a plurality of logical blocks;

recording means for continuously recording information signals in said user data region of said storage means from a recording start logical block to a recording end logical block and for again recording the information signals from the recording start logical block; and

reproducing means for reproducing information signals stored in said recording means;

said recording means and the reproducing means recording information signals in the user data region of said disc-shaped recording medium and reproducing the information signals recorded in the user data region of the disc-shaped recording medium.

19. The information recording/reproducing apparatus according to claim 18 wherein

said recording means includes

splitting means for splitting the user data region of said disc-shaped recording medium into a plurality of data areas.

20. An information recording/reproducing method comprising:

continuously recording information signals from a recording start logical block to a recording end logical block on a disc-shaped recording medium having a management information region and a user data region made up of a plurality of logical blocks, and again recording information from the recording start logical block; and

reproducing the information signals recorded in the user data region of the disc-shaped recording medium.

21. The information recording/reproducing method according to claim 20 further comprising:

splitting the user data region of said disc-shaped recording medium into a plurality of data areas; and

recording information s in said data area while reproducing information signals recorded in the user data region of the disc-shaped recording medium.